APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/449,085	11/24/1999	KARTHIKEYAN (NMI) RAMASAMY	8343	5848

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EXAMINER
DODDS, HAROLD E

ART UNIT	PAPER NUMBER
2177	

DATE MAILED: 02/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/449,085	RAMASAMY ET AL.
	Examiner	**Art Unit**
	Harold E. Dodds, Jr.	2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Oath/Declaration

1.   The petition for acceptance of national application without participation of

one or more inventors under 37 CFR 1.47, MPEP section 409.03 has been received

and will be reviewed in due course.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1, 2, 11, 12, 21, and 22 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Wygodny et al. (U.S. Patent No. 6,282,701), Grimsrud (U.S.

Patent No. 5,726,913), and Chaudhuri et al. (U.S. Patent No. (5,926,813).

4.   Wygodny rendered obvious independent claims 1, 11, and 21 by the

following:

"...storing an...trace record..." at col. 7, lines 40-43.

"...for each execution thread..." at col. 8, lines 63-66.

"...including a thread identifier (ID)..." at col. 19, lines 47-48.

"...and a time stamp..." at col. 20, lines 27-30.

"...retrieving the...trace information..." at col. 8, lines 18-20.

"...presenting the retrieved...trace information to a user..." at col. 8, lines 18-20.

Wygodny does not teach the use of execution trace records and the obtaining of trace information during a query.

5.   However, Grimsrud teaches the use of execution trace records as follows:

"...execution trace record..." at col. 1, lines 59-62.

"...execution trace information..." at col. 1, lines 59-62.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to use execution trace records to capture trace information in order to have a convenient means of storing the trace data.

Grimsrud does not teach the obtaining of trace information during a query.

6.   However, Chaudhuri teaches the obtaining of trace information during a query as follows:

"...after execution of the query..." at col. 2, lines 21-24 and col. 5, lines 62-64.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to use execution trace records to capture trace information about queries in order to have a convenient means of determining the processes that occurred during the query and the amounts of memory required by these processes.

7.   A per claims 2, 12, and 22, the "...step of executing the query...," is taught by Chaudhuri at col. 2, lines 21-24,

the "...step of storing an...trace record...," is taught by Wygodny at col. 7, lines 40-43,

the "...execution trace record...," is taught by Grimsrud at col. 1, lines 59-62,

the "...for each execution thread...," is taught by Wygodny at col. 8, lines 63-66,

and the "...is performed while executing the query...," is taught by Chaudhuri at col. 2,

lines 21-24.

8.   Claims 3, 13, and 23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Wygodny, Grimsrud, and Chaudhuri as applied to claims 1, 11, and

21 above respectively, and further in view of Goldring (U.S. Patent No. 5,613,113).

As per claims 3, 13, and 23, the "...comprises a plurality of execution threads...,"

is taught by Wygodny at col. 8, lines 63-66,

the "...presenting the retrieved...trace information to the user...," is taught by Wygodny

at col. 8, lines 18-20,

the "...execution trace information...," is taught by Grimsrud at col. 1, lines 59-62,

the "...execution trace records...," is taught by Grimsrud at col. 1, lines 59-62,

the "...according to the thread ID...," is taught by Wygodny at col. 19, lines 47-48,

and the "...time stamp...," is taught by Wygodny at col. 20, lines 27-30,

but the "...comprises the step of synchronizing the...trace records...," is not taught by

either Wygodny, Grimsrud, or Chaudhuri.

However, Goldring teaches the synchronization of trace records as follows:

"...To trace the changes and recreate the condition of the data
base at various points in time, it is necessary to join up the
change operations with the commit operations to synchronize the
records in the activity log with the changes that actually were
committed..." at col. 45-50.

It would have been obvious to one ordinarily skilled in the art at the time of the

invention to synchronize the execution trace records in order to provide an ordered set

of execution trace records for the viewing by the user and to facilitate the user's analysis

of the data.

9.   Claims 4, 14, and 24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Wygodny, Grimsrud, and Chaudhuri as applied to claims 1, 11, and

21 above respectively, and further in view of Rust (U.S. Patent No. 5,978,928).

As per claims 4, 14, and 24, the "...time stamp is an absolute time stamp...," is

not taught by either Wygodny, Grimsrud, or Chaudhuri.

However, Rust teaches the use of an absolute time stamp as follows:

```
"...Conventional time stamp systems are absolute. Absolute time
stamp systems initiate a time clock when power is supplied to
the system for the first time..." at col. 1, lines 20-22.
```

It would have been obvious to one ordinarily skilled in the art at the time of the

invention to use an absolute time stamp in the execution trace records in order to

provide a reference time for the synchronism of these records.

10.   Claims 5, 15, and 25 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Wygodny, Grimsrud, and Chaudhuri as applied to claims 1, 11, and

21 above respectively, and further in view of Bamford et al. (U.S. Patent No. 6,243,702).

As per claims 5, 15, and 25, the "...time stamp is a logical time stamp....," is not

taught by either Wygodny, Grimsrud, and Chaudhuri.

However, Bamford teaches the use of a logical time stamp as follows:

```
"...To provide transactions with database snapshots, a multi-
version parallel database system typically stamps each version
of data with a logical timestamp..." at col. 1, lines 30-32.
```

It would have been obvious to one ordinarily skilled in the art at the time of the

invention to use a logical time stamp in the execution trace records in order to provide a

reference time for the synchronism of these records.

11.   Claims 6, 16, and 26 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Wygodny, Grimsrud, and Chaudhuri as applied to claims 1, 11, and

21 above respectively, and further in view of Maier et al. (U.S. Patent No. 5,625,815).

As per claims 6, 16, and 26, the "...storing an...trace record...," is taught by

Wygodny at col.7, lines 40-43,

the "...execution trace record...," is taught by Grimsrud at col. 1, lines 59-62,

the "...for each execution thread...," is taught by Wygodny at col. 8, lines 63-66,

the "...in at least one execution log file...," is taught by Wygodny at col. 3, lines 10-11,

but the "...comprises means for splitting the execution log file into a plurality of

partitions...," is not taught by either Wygodny, Grimsrud, or Chaudhuri.

However, Maier teaches the splitting of files into multiple partitions as follows:

```
"...For the purposes of explaining the Split Partition
procedure, it will be assumed that a partition of a database
file is being split into two partitions, with the understanding
that the same steps would be performed for splitting a
previously unpartitioned database file or for splitting an index
file or a partition of an index file..." at col. 9, lines 20-26.
```

It would have been obvious to one ordinarily skilled in the art at the time of the

invention to be able to split log files into multiple partitions in order to provide better

memory management for the log file and to facilitate the synchronism of log records.

12.   Claims 7, 8, 17, 18, 27, and 28 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Wygodny, Grimsrud, Chaudhuri, and Maier as applied to

claims above, and further in view of Orcutt (U.S. Patent No. 6,185,575).

As per claims 7, 17, and 27, the "...execution log file...," is taught by Wygodny at

col. 3, lines 10-11,

the "...is split into the plurality of partitions...," is taught by Maier at col. 9, lines 20-26,

the "...based upon an amount of execution trace information...," is taught by Wygodny at

col. 8, lines 18-20,

but the "...amount of storage space...," is not taught by either Wygodny, Grimsrud,

Chaudhuri, or Maier.

However, Orcutt teaches the use of storage space as follows:

```
"...In addition, although the aforementioned patents provide
useful methods for reclaiming storage space by changing cluster
size and/or partition size, the patents do not present certain
other methods for optimizing NTFS storage efficiency..." at col.
33-37.
```

It would have been obvious to one ordinarily skilled in the art at the time of the

invention to use the amount of available storage space as a factor in determining when

to split log files into partitions in order to optimize storage efficiency.

13.   As per claims 8, 18, and 28, the "...steps of reusing the partitions...," is

taught by Maier at col. 9, lines 20-26,

the "...when the execution log file...," is taught by Wygodny at col. 3, lines 10-11,

but the "...exceeds a partition size....," is not taught by either Wygodny, Grimsrud,

Chaudhuri, or Maier.

However, Orcutt teaches the use of the partition size as follows:

"...In addition, although the aforementioned patents provide
useful methods for reclaiming storage space by changing cluster
size and/or partition size, the patents do not present certain
other methods for optimizing NTFS storage efficiency..." at col.
33-37.

It would have been obvious to one ordinarily skilled in the art at the time of the

invention to use the partition size as a factor in determining when to split log files into

partitions in order to optimize storage efficiency.

14.   Claims 9, 19, and 29 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Wygodny, Grimsrud, and Chaudhuri as applied to claims 1, 11, and

21 above respectively, and further in view of Pizano (U.S. Patent No. 6,021,434).

As per claims 9, 19, and 29, the "...step of presenting the retrieved execution trace

information to a user...," is taught by Wygodny at col. 8, lines 18-20.

the "...arranging the retrieved...trace records...," is taught by Wygodny at col. 8, lines 18-20,

the "...execution trace records...," is taught by Grimsrud at col. 1, lines 59-62,

the "...according to the thread ID...," is taught by Grimsrud at col. 19, lines 47-48,

the "...time stamp...," is taught by Grimsrud at col. 20, lines 27-30,

but the "...accepting a presentation command..."

and the "...playback command...," are not taught by either Wygodny, Grimsrud, or Chaudhuri.

However, Pizano teaches the use of playback commands as follows:

"...Upon completion of the fax sending task, VPA 14 plays a
prompt that gives the user, through playback commands 25, the
options to playback the audio portion of the video..." at col.
3, lines 44-47.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to provide the user with playback commands in order for the user to view the execution trace data.

15.   Claims 10, 20, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wygodny, Grimsrud, Chaudhuri, and Pizano as applied to claims 9, 19, and 29 above respectively, and further in view of Sharples et al. (U.S. Patent No. 4,772,966).

As per claims 10, 20, and 30, the "...presentation command...," is taught by Pizano at col. 3, lines 44-47,

but the "...is selected from the group comprising a play command, a stop command, a reverse play command, a fast play command, and a fast reverse play command...," is not taught by either Wygodny, Grimsrud, Chaudhuri, or Pizano.

However Sharples teaches the use of these commands as follows:

```
"...The synchronizer then generates for the slave transport
rewind, fast-forward, stop, play and capstan speed command
signals..." at col. 1, lines 36-38.
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"...it is possible to reverse the direction command..." at col.
13, line 52.
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It would have been obvious to one ordinarily skilled in the art at the time of the invention to provide the user with a set of playback commands in order for the user to have flexibility in the viewing of the execution trace data.

16.   Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaudhuri, Wygodny, Grimsrud, and Hallmark et al. (U.S. Patent No. (5,857,180).

17.   Chaudhuri rendered obvious independent claim 31 by the following:

"...monitoring an execution of a query..." at col. 2, lines 21-24 and col. 5, lines 62-64.

"...comprising a data server..." at col. 1, lines 24-26.

"...for storing an execution plan..." at col. 7, lines 64-67 and col. 8, lines 1-7.

"...and the execution plan..." at col. 7, lines 64-67 and col. 8, lines 1-7.

"...after execution of the query..." at col. 2, lines 21-24 and col. 5, lines 62-64.

Chaudhuri does not teach the use of execution threads, the storing of execution

trace records, the use of thread identifiers, the use of time stamps, the use of a query

coordinator, the synchronizing of records, a client process, and displaying the retrieved

execution trace information to a user.

18.   However, Wygodny teaches the use of execution threads, the storing of

trace records, the use of thread identifiers, the use of time stamps, a client process, and

displaying the retrieved execution trace information to a user as follows:

"...comprises at least one execution thread..." at col. 8, lines 63-66.

"...for executing the execution thread..." at col. 8, lines 63-66.

"...for storing an...trace record..." at col. 7, lines 40-43.

"...for the executed execution thread..." at col. 8, lines 63-66.

"...information including a thread identifier (ID)..." at col. 19, lines 47-48

"...and a time stamp..." at col. 20, lines 27-30.

"...having a time stamp..." at col. 20, lines 27-30.

"...and a client process ..." at col. 3, lines 4-7.

"...for displaying the retrieved...trace information to a user..." at col. 8, lines 18-20.

It would have been obvious to one ordinarily skilled in the art at the time of the

invention to use a client process to produce execution threads containing thread

identifiers and time stamps to be used in the display of the trace information in order to

provide a set of processes to produce, store, and display trace information to provide for

an analysis of the steps taken during a query process.

Wygodny does not teach the use of execution trace records, the use of a query

coordinator, and the synchronizing of records.

19.   However, Grimsrud teaches the use of execution trace records as follows:

"...execution trace records..." at col. 1, lines 59-62.

"...the execution trace record..." at col. 1, lines 59-62.

"...the execution trace record having..." at col. 1, lines 59-62.

"...execution trace information..." at col. 1, lines 59-62.

It would have been obvious to one ordinarily skilled in the art at the time of the

invention to use execution trace records to capture trace information in order to have a

convenient means of storing the trace data.

Grimsrud does not teach the use of a query coordinator and the synchronization

of records.

20.   However, Hallmark teaches use of a query coordinator and the

synchronization of records as follows:

"...a query coordinator..." at col. 2, lines 59-60.

"...and for retrieving and synchronizing..." at col. 22, lines 14-17.

It would have been obvious to one ordinarily skilled in the art at the time of the invention to use a query coordinator process to produce, store and execute the queries and to store the execution plans in order to provide an orderly and controlled process of the execution of queries. Likewise, it would have been obvious to one ordinarily skilled in the art at the time of the invention to synchronize the execution trace records in order to provide an ordered set of execution trace records for the viewing by the user and to facilitate the user's analysis of the data.

21.   As per claim 32, the "... data server...," is taught by Chaudhuri at col. 1, lines 24-46,   --

the "...and the query coordinator...," is taught by Hallmark at col. 2, lines 59-60,

the "...stores the...trace record...," is taught by Wygodny at col. 7, lines 40-43,

the "...execution trace record...," is taught by Grimsrud at col. Col. 1, lines 59-62,

the "...execution plan...," is taught by Chaudhuri at col. 7, lines 64-67 and col. 8, lines 1-7,

and the "...while executing the query...," is taught by Chaudhuri at col. 2, lines 21-24 and col. 5, lines 62-64.

22.   As per claim 33, the "...query execution...," is taught by Chaudhuri at col. 2, lines 21-24 and col. 5, lines 62-64,

the "...comprises a plurality of execution threads...," is taught by Wygodny at col. 8, lines 63-66,

the "...query coordinator ...," is taught by Hallmark at col. 2, lines 59-60,

the "...synchronizes...," is taught by Hallmark at col. 22, lines 14-17,

the "...execution trace records...," is taught Grimsrud at col. Col. 1, lines 59-62,

the "...according to the thread ID...," is taught by Wygodny at col. 19, lines 47-48,

and the "...time stamp...," is taught by Wygodny at col. 20, lines, 27-30.

23.   Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Wygodny, Grimsrud, Chaudhuri, and Hallmark as applied to claim 31 above, and further

in view of Rust.

As per claim 34 the "...time stamp is an absolute time stamp...," is not taught by

either Chaudhuri, Wygodny, Grimsrud, or Hallmark.

However, Rust teaches the use of an absolute time stamp as follows:

```
"...Conventional time stamp systems are absolute. Absolute time
stamp systems initiate a time clock when power is supplied to
the system for the first time..." at col. 1, lines 20-22.
```

It would have been obvious to one ordinarily skilled in the art at the time of the

invention to use an absolute time stamp in the execution trace records in order to

provide a reference time for the synchronism of these records.

24.   Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Wygodny, Grimsrud, Chaudhuri, and Hallmark as applied to claim 31 above, and further

in view of Bamford.

As per claim 35, the "...time stamp is a logical time stamp...," is not taught by

either Wygodny, Grimsrud, Chaudhuri, or Hallmark.

However, Bamford teaches the use of a logical time stamp as follows:

```
"...To provide transactions with database snapshots, a multi-
version parallel database system typically stamps each version
of data with a logical timestamp..." at col. 1, lines 30-32.
```
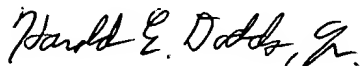
It would have been obvious to one ordinarily skilled in the art at the time of the

invention to use a logical time stamp in the execution trace records in order to provide a

reference time for the synchronism of these records.

Conclusion

25.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Harold E. Dodds, Jr. whose telephone number is

(703)-305-1802. The examiner can normally be reached on Monday - Friday 8:00 -

4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John E. Breene can be reached on (703)-305-9790. The fax phone

numbers for the organization where this application or proceeding is assigned are (703)-

305-9730 for regular communications and 703-746-7238 for After Final

communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703)-

305-3900.

Harold E. Dodds, Jr.
Patent Examiner
February 7, 2002

JOHN BREENE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100